AMENDMENTS TO THE CLAIMS

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

Listing of Claims:

1. (Currently Amended) A method for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

generating an image of a region of the sample to be analyzed, the region of the sample including a plurality of periodic patterns;

generating ~~data having a~~ frequency data from a plurality of portions of the image by the Fast Fourier Transformation method, each portion of the image displaying segments from all the periodic patterns in the image;

~~determining whether the region is normal or abnormal based on a comparison of~~ comparing the frequency data of the plurality of portions ~~of the data~~ generated by the Fast Fourier Transformation method without using a separate reference sample to determine whether an abnormal frequency peak exists, the abnormal frequency peak indicating an abnormal region; and

providing an alarm when the region is abnormal.

2. (Currently Amended) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the region includes ~~a periodically formed pattern~~ only periodic patterns.

3. (Currently Amended) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the region is formed on a semiconductor substrate and corresponds to a cell region including ~~a~~ periodic patterns.

4. (Currently Amended) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 3, wherein ~~the~~ each periodic pattern has a line width and is formed by an etching process.

5. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the image is generated by a scanning electron microscope.

6. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, further comprising defining the image into at least two pixel units.

7. (Cancelled)

8. (Previously Presented) A method for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

generating a magnified image of a minute pattern formed in a cell region of a semiconductor substrate;

measuring a line width of the minute pattern using the magnified image;

generating data having a frequency from a plurality of portions of the image by the Fast Fourier Transformation method;

determining whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample,

wherein measuring the line width of the minute pattern and generating data having a frequency from a plurality of portions of the image are simultaneous.

9. (Currently Amended) An apparatus for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

an image generation part for generating an image of a region of the sample to be analyzed, the region of the sample including a plurality of periodic patterns;

a data generation part for generating ~~data having a~~ frequency data from a plurality of portions of the image by the Fast Fourier Transformation method, each portion of the image displaying segments from all the periodic patterns in the image;

a data discrimination part for determining whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample; and

an alarm part for providing an alarm when the region is abnormal.

10. (Original) The apparatus for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 9, wherein the image generation part includes a scanning electron microscope.

11. (Original) The apparatus for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 9, further comprising a display part for displaying the generated data.

12. (Cancelled)

13. (Previously Presented) An apparatus for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

a scanning electron microscope for generating a magnified image of a minute pattern formed in a cell region of a semiconductor substrate;

a line width measurement part for measuring a line width of the minute pattern using the magnified image;

a data generation part for generating data having a frequency from a plurality of portions of the magnified image by the Fast Fourier Transformation method;

a data discrimination part for analyzing the generated data from the plurality of portions of the image to determine whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample;

wherein measuring the line width of the minute pattern and generating data having a frequency from a plurality of portions are simultaneous.

14 - 17. (Cancelled)

18. (Previously Presented) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein analyzing the generated data includes using solely the data generated from the image.

19. (Cancelled)

20. (Previously Presented) The apparatus as claimed in claim 13, wherein the data discrimination part is configured to use solely the data generated by the data generation part with respect to the magnified image.

21. (New) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein generating the frequency data from each portion of the plurality of portions of the image includes generating a frequency graph for each portion of the plurality of portions of the image.

22. (New) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 21, wherein comparing the frequency data of the plurality of portions includes comparing the frequency graphs of the plurality of portions to each other to determine the abnormal frequency peak.

23. (New) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the plurality of periodic patterns extends along a first direction, the plurality of image portions for generating frequency data extends along a second direction, and the second direction being orthogonal to the first direction.